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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,765	02/12/2002	Ashish Banerji	PD-201157	9961
7590 04/28/2009 Hughes Electronics Corporation Patent Docket Administration Bldg. 1, Mail Stop A109 P.O. Box 956 El Segundo, CA 90245-0956			EXAMINER VO, TUNG T	
			ART UNIT 2621	PAPER NUMBER
			MAIL DATE 04/28/2009	DELIVERY MODE PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ASHISH BANERJI
and KUMAR SWAMINATHAN

Appeal 2008-5857
Application 10/074,765
Technology Center 2600

Decided:¹ April 28, 2009

Before KENNETH W. HAIRSTON, JOHN A. JEFFERY
and MARC S. HOFF, *Administrative Patent Judges*.
HAIRSTON, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from a final rejection of claims 1 to 23. We have jurisdiction under 35 U.S.C. § 6(b).

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper deliver) or Notification Date (electronic delivery).

We will reverse the rejections.

Appellants have invented a method and system for compressing video by grouping video frames that are only between consecutive I-frames into a video data set of non-intra video frames, splitting the video data set into a plurality of homogeneous files, and individually compressing each of the homogeneous files (Figs. 1 and 3; Spec. 2, 3, 5, 7, and 16; Abstract).

Claim 1 is representative of the claims on appeal, and it reads as follows:

1. A method of compressing video, comprising:
grouping video frames that are only between consecutive I-frames into a video data set;
splitting the video data set into a plurality of homogeneous files; and
individually compressing each of the homogeneous files.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Gonzales	US 5,414,469	May 9, 1995
Carnahan	US 5,414,780	May 9, 1995
Weinberger	US 5,680,129	Oct. 21, 1997
Kato	US 5,719,986	Feb. 17, 1998
Moroney	US 5,771,239	Jun. 23, 1998
Chujoh	US 6,317,461 B1	Nov. 13, 2001
Wu	US 6,700,933 B1	Mar. 2, 2004 (filed Feb. 15, 2000)

The Examiner rejected claims 1 to 3, 5, 7, 12, 14, and 16 to 23 under 35 U.S.C. § 102(b) based upon the teachings of Gonzales.

The Examiner rejected claims 1 to 3, 11 to 14, and 16 to 23 under 35 U.S.C. § 102(e) based upon the teachings of Wu.

The Examiner rejected claims 4 and 16 under 35 U.S.C. § 103(a) based upon the teachings of Wu and Carnahan.

The Examiner rejected claims 6, 7, and 16 under 35 U.S.C. § 103(a) based upon the teachings of Wu and Kato.

The Examiner rejected claims 8 and 16 under 35 U.S.C. § 103(a) based upon the teachings of Wu and Weinberger.

The Examiner rejected claims 9 and 10 under 35 U.S.C. § 103(a) based upon the teachings of Wu and Moroney.

The Examiner rejected claims 15 and 16 under 35 U.S.C. § 103(a) based upon the teachings of Wu and Chujoh.

ISSUES

Anticipation

Appellants argue (App. Br. 6 to 10) that Gonzales as well as Wu fail to teach grouping video frames that are only between consecutive I-frames into a video data set as set forth in claims 1, 17, 19, and 22, and that Gonzales as well as Wu fail to teach splitting the video data set consisting of non-intra video frames into a plurality of data sequences as set forth in claim 21. Thus, the issues before us are: Have Appellants shown that the Examiner erred by finding that Gonzales as well as Wu teach grouping video frames that are only between consecutive I-frames into a video data set?

Have Appellants shown that the Examiner erred by finding that Gonzales as well as Wu teach splitting the video data set consisting of non-intra video frames into a plurality of data sequences?

Obviousness

Appellants argue (App. Br. 10 to 12) that the applied references fail to teach the claimed subject matter set forth in claims 4, 6 to 10, 15, and 16. Thus, the issue before us is: Have Appellants shown that the applied references neither teach nor would have suggested the claimed subject matter?

FINDINGS OF FACT

1. According to Appellants (Spec. 2), frames that are coded without any reference to previously coded frames are referred to as Intra frames (i.e., I-frames). Frames that are coded using a previously coded frame are Inter frames or non-Intra frames. Inter frames can be either predictive frames (i.e., P-frames) or bidirectionally predictive frames (i.e., B-frames).

2. Appellants indicate (Spec. 2) that I-frames are spaced a certain number of frames apart, with several P-frames and B-frames between two consecutive I-frames.

3. The spacing between consecutive I-frames is referred to as an I-frame distance (Spec. 2).

4. Figure 3 of Appellants' drawings shows an I-frame distance set split into a number of P-frame and B-frame homogeneous files 311 to 318 that are individually compressed at locations 321 to 328.

5. Gonzales describes a motion video compression system in which Figure 1 shows Groups of Pictures (GOPs), Figure 2 shows a macroblock (MB) subdivision of a picture in a GOP, Figure 3 shows a slice subdivision of a picture in a GOP, and Figure 4 shows a block subdivision of a MB (col. 2, l. 61 to col. 3, l. 34).

6. Figure 5 of Gonzales shows a plurality of B-frames and a plurality of P-frames between two I-frames. Gonzales states that each GOP must start with an I-picture, that additional I-pictures can appear within the GOP, and that I-pictures are compressed independently of any other picture (col. 3, ll. 35 to 44).

7. Wu describes an encoding method and system in which an I-frame of a base layer and I-frames of enhancement layers in the leftmost column in each of Figures 1, 2, 4, and 5 are used in the encoding schemes (col. 2, l. 12 to col. 3, l. 16; col. 6, l. 55 to col. 8, l. 26).

PRINCIPLES OF LAW

Anticipation

Anticipation is established when a single prior art reference discloses expressly or under the principles of inherency each and every limitation of the claimed invention. *Atlas Powder Co. v. IRECO Inc.*, 190 F.3d 1342, 1347 (Fed. Cir. 1999); *In re Paulsen*, 30 F.3d 1475, 1478-79 (Fed. Cir. 1994).

Obviousness

The Examiner bears the initial burden of presenting a prima facie case of obviousness, and the Appellants have the burden of presenting a rebuttal to the prima facie case. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

ANALYSIS

Anticipation

Turning first to the anticipation rejection based upon the teachings of Gonzales, we find that Gonzales, like Appellants, describes a group of P-frames and B-frames between two I-frames (FF 2, 3, and 6). Although Gonzales states that I-pictures are compressed independently of any other pictures (FF 6), Gonzales is silent as to whether or not the P-frames and the B-frames are compressed independently of the I-frames. Gonzales is equally silent as to grouping video frames that are *only* between consecutive I-frames into a video data set as set forth in claims 1, 17, 19, and 22, and splitting the video data set *consisting of non-intra video frames* into a plurality of data sequences as set forth in claim 21.

Turning next to the anticipation rejection based upon the teachings of Wu, we find that I-frames are used throughout the encoding schemes described by Wu (FF 7). Wu, like Gonzales, is silent as to grouping video frames that are *only* between consecutive I-frames into a video data set as set forth in claims 1, 17, 19, and 22, and splitting the video data set *consisting of non-intra video frames* into a plurality of data sequences as set forth in claim 21.

Thus, we agree with Appellants' arguments (App. Br. 6 to 10) that Gonzales and Wu both fail to disclose the noted method step and system limitation. It follows that anticipation has not been established by the Examiner because Gonzales as well as Wu do not disclose each and every limitation of the claimed invention set forth in claims 1, 17, 19, 21 and 22. *Atlas Powder Co.*, 190 F.3d at 1347; *Paulsen*, 30 F.3d at 1478-79.

Obviousness

A prima facie case of obviousness of the claimed subject matter set forth in dependent claims 4, 6 to 10, 15, and 16 has not been established by the Examiner because the teachings of the references to Carnahan, Kato, Weinberger, Moroney, and Chujoh all fail to cure the noted shortcomings in the teachings of Wu. *Oetiker*, 977 F.2d at 1445.

CONCLUSIONS OF LAW

Anticipation

Appellants have demonstrated that the Examiner erred by finding that Gonzales as well as Wu teach grouping video frames that are only between consecutive I-frames into a video data set.

Appellants have demonstrated that the Examiner erred by finding that Gonzales as well as Wu teach splitting the video data set consisting of non-intra video frames into a plurality of data sequences.

Obviousness

Appellants have demonstrated that the Examiner erred by finding that the applied references teach or would have suggested the claimed subject matter.

ORDER

The decision of the Examiner rejecting claims 1 to 3, 5, 7, 12, 14, and 16 to 23 under 35 U.S.C. § 102(b) is reversed. The decision of the Examiner rejecting claims 1 to 3, 11 to 14, and 16 to 23 under 35 U.S.C. § 102(e) is reversed. The decision of the Examiner rejecting claims 4, 6 to 10, 15, and 16 under 35 U.S.C. § 103(a) is reversed.

REVERSED

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